NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Applicant: Solid Solutions, L.L.C.
214 Main St., Suite 383
El Segundo, CA 90245

Permit: NEV2002501 – Major Modification

Location: Funeral Mountain Ranch
Casada Road
Amargosa Valley, Nye County, Nevada 89020

Latitude 36° 32' 47" N
Longitude 116° 32' 01" W

Township 16 S, Range 48 E, Sections 14, 23, 24, & 26 MDB&M

General: The Applicant has requested a permit modification to increase the permitted biosolids daily maximum application rate from 100 cubic yards (yd^3) to 300 yd^3 and to increase the 30-day maximum application rate from 1,625 yd^3 to 5,000 yd^3. The Applicant is permitted to land apply Class B or better biosolids, processed sewage sludge, to agricultural land on the 1,360-acre Funeral Mountain Ranch, Amargosa Valley, Nevada. The approximately 700 acres of biosolids application fields are located along Casada Road and Fortymile Wash. The permit will restrict the land application to appropriate portions of the ranch; i.e. biosolids cannot be applied within thirty-three feet of waters of the U.S., biosolids cannot be applied within 100 feet of any public roadway or 600 feet from a residence, etc.

The permit authorizes the Applicant to land apply bulk biosolids from the City of Oceanside San Luis Rey and La Salina, the City of Riverside, and the Orange County Sanitation District Plants #1 and #2 Wastewater Treatment Plants, only. The Applicant is responsible for providing the Division with documentation of the biosolids pathogen reduction and analyses, i.e. metals, nutrients, etc. from a certified laboratory. The Applicant is responsible for determining biosolids application rates and complying with the site restrictions. Biosolids applied to the land surface shall be incorporated into the soil within six hours of delivery to the site.

The Applicant is required to designate specific fields for application of biosolids from each treatment plant. Mixing of biosolids from various treatment plants is not authorized. The Operations and Maintenance Manual designates which fields are to receive biosolids from which treatment plant and provide details on how the biosolids are tracked.

The Class B biosolids pathogen reduction requirements are not as stringent as the Class A requirements, therefore, there are more restrictions for the harvesting of crops and the grazing of animals on Class B application sites. Only non-food crops may be grown on land that has had Class B biosolids applied within the past three years. Animals shall not be grazed on the land for 30 days after application of biosolids. This permit does not differentiate between Class A and Class B biosolids. So all handling and management of biosolids land application sites must meet Class B requirements.

To qualify as pollutant concentration (PC) biosolids, the arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc concentrations must be below the pollutant concentration limits established by Title 40 of the Code of Federal Regulations, Part 503 (40 CFR Part 503). PC biosolids are exempt from the cumulative pollutant loading rate requirements; therefore, PC biosolids may be applied based on the agronomic rate. The agronomic rate for biosolids is a rate that is designed to provide the amount of nitrogen needed by a crop to attain a desired yield while minimizing the amount of nitrogen that will pass below the root zone of the crop to the groundwater.

Receiving Water Characteristics: The groundwater is reported to be approximately 100 feet below ground

surface at an elevation of approximately 2,240 feet and is of good quality with all metals below the detection limits and the following constituent concentrations:

Chloride	9.9 mg/L	Sulfate	36 mg/L
Fluoride	2.3 mg/L	Total Dissolved Solids	360 mg/L
Nitrate	1.6 mg/L	pH	8.27 SU

mg/L: Milligrams per liter.
SU: Standard units.

The chloride, nitrate, and sulfate concentrations are similar to USGS groundwater monitoring data from nearby production wells. Fluoride and TDS USGS data was not provided.

Groundwater monitoring is not required for agricultural biosolids beneficial use sites.

Characteristics: The biosolids from the five sources shall be treated at the wastewater treatment plants to meet Class B, or higher, standards for pathogen reduction. The volatile solids content of the biosolids from each plant shall be reduced by at least 38% to meet vector attraction reduction requirements. The following results from 2002 metal analyses have demonstrated that the biosolids from these five sources comply with the metals pollutant concentration limits for exceptional quality and PC biosolids:

Pollutants	Pollutant Concentration Limits	Riverside 12/31/02	La Salina 12/20/02	San Luis Rey 12/20/02	Orange #1 5/14/02	Orange #2 5/14/02
Arsenic (mg/Kg)	41	6.4	ND	ND	6.4	8.1
Cadmium (mg/Kg)	39	3.0	4.5	7.8	9.8	8.7
Chromium (mg/Kg)	1200	40	27	29	89	120
Copper (mg/Kg)	1500	870	370	420	700	800
Lead (mg/Kg)	300	46	20	16	36	34
Mercury (mg/Kg)	17	1.7	1.1	1.2	2.6	2.6
Molybdenum (mg/Kg)	75	20	ND	15	17	14
Nickel (mg/Kg)	420	20	23	55	110	100
Selenium (mg/Kg)	36	11	11	15	6.2	7.2
Zinc (mg/Kg)	2800	870	700	700	700	930

Notes: mg/Kg: Milligrams per kilogram, dry-weight basis.
ND: Analyte not detected.

The nitrogen concentration in the biosolids varies significantly from plant to plant as shown in the following table:

Nitrogen Species	San Luis Rey 11/19/01	Orange #1 May 2002 Monthly Mean	Orange #2 May 2002 Monthly Mean
Ammonia –N (mg/Kg)	8,700	3,300	3,700
Nitrate –N (mg/Kg)	28	ND	ND
Total Kjeldahl Nitrogen (mg/Kg)	31,000	27,000	18,000

Notes: -N: As nitrogen.
mg/Kg: Milligrams per kilogram dry-weight basis.
ND: Analyte not detected.

Flow: The permit modification application included a maximum 30-day average flow of discharge of 5,000 cubic yards, which places this project in the large reuse of sewage sludge fee category, 20,000 cubic yards or more per year. The application rate for the Class B biosolids is based on the Plant Available Nitrogen of the biosolids and the alfalfa nitrogen requirement of 480 pounds per acre based on an 8-ton yield.

Proposed Permit Limitations: The Permittee shall meet all of the requirements of 40 CFR Part 503, Standards for the Use or Disposal of Sewage Sludge. These requirements specify the quality of biosolids that can be applied and the restrictions on crops that can be grown. For PC biosolids, the maximum application rate shall be determined by the agronomic rate.

BIOSOLIDS CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum[4]	30-Day Maximum[4]	Measurement Frequency	Sample Type
Biosolids Applied (yd^3)	300	5,000	Daily[3]	Load Count
Biosolids Applied (dt)	Monitor and Report		Quarterly	Calculate
Application Area (A)	Monitor and Report		Quarterly	Calculate
Crop Grown	Report		Annually[2]	Report
Crop Yield (t/A)	Monitor and Report		Annually[2]	Calculate
Organic Nitrogen (mg/Kg)	Monitor and Report		Bimonthly[1]	Composite
Ammonia Nitrogen	Monitor and Report		Bimonthly[1]	Composite
Nitrate Nitrogen (mg/Kg)	Monitor and Report		Bimonthly[1]	Composite
Plant Available N (lb-N/t)	Monitor and Report		Bimonthly[1]	Calculate
Arsenic (mg/Kg)	41		Bimonthly[1]	Composite
Cadmium (mg/Kg)	39		Bimonthly[1]	Composite
Chromium (mg/Kg)	1200		Bimonthly[1]	Composite
Copper (mg/Kg)	1500		Bimonthly[1]	Composite
Lead (mg/Kg)	300		Bimonthly[1]	Composite
Mercury (mg/Kg)	17		Bimonthly[1]	Composite
Molybdenum (mg/Kg)	75		Bimonthly[1]	Composite
Nickel (mg/Kg)	420		Bimonthly[1]	Composite
Selenium (mg/Kg)	36		Bimonthly[1]	Composite
Zinc (mg/Kg)	2800		Bimonthly[1]	Composite

Footnotes:

1. The biosolids shall be analyzed at least every two months, six times a year. Quarterly data shall be calculated by using weighted averages for the 3 month period.
2. Annual data shall be submitted with the fourth quarter reports.
3. Daily data shall be reported quarterly.
4. Maximum total biosolids delivered to the site from all five sources per month.

dt: Dry metric tons. yd^3: Cubic yards.
A: Acres. mg/Kg: Milligrams per kilogram, dry-weight basis.
t/A: Dry metric tons per acre. lb-N/t: Pounds of nitrogen per metric ton.

The Applicant is responsible for the quality of the biosolids transported to the Funeral Mountain Ranch.

Schedule of Compliance and Special Conditions: The Permittee shall implement and comply with the

provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications that the Administrator may make in approving the schedule of compliance. The Permittee shall implement and/or execute the following scheduled compliance requirements:

a. Upon the effective date of this permit, the Permittee shall achieve compliance with the beneficial use limitations.

b. Within thirty (30) days of the permit modification effective date, the Permittee shall submit a report identifying all wells within 1,000 feet of the land application site. The report shall include but is not limited to a location map for each well illustrating the required buffer area, seal documentation, and well logs.

There are no special conditions.

Rationale for Permit Requirements: Monitoring of the biosolids and of the application rate by the Applicant is required to protect the public and wildlife from pathogens that may be in the biosolids and to protect waters of the State from being degraded by the biosolids.

The beneficial use site shall be operated in accordance with the O&M Manual that must be approved by the Division.

Composite samples of the biosolids from each source will be analyzed six times per year by a certified laboratory to insure metal concentrations required by 40 CFR Part 503 for PC biosolids are met.

The biosolids from each source will be analyzed six times per year by a certified laboratory for nitrogen content to insure that the biosolids are not applied in excess of the agronomic rate.

Proposed Determination: The Division has made the tentative determination to issue the modified permit without change to the May 20, 2008 permit expiration date.

Procedures for Public Comment: The Notice of the Division's intent to issue a modified permit authorizing the facility to land apply biosolids at an increased rate subject to the conditions contained within the permit is being sent to the **Pahrump Valley Times** and the **Las Vegas Review-Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of 30 days following the date of publication of the public notice in the newspaper. The date and time by which all written comment must be postmarked or transmitted to the Division via facsimile or e-mail is 5:00 PM October 24, 2003. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period, must indicate the interest of the person filing the request, and must state the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Bruce Holmgren
September 2003
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